**Problem of the Week #7 Q2**

Due 12/2/11 by 3:15 PM

Turn in to the Math Office or email to 13mmistele@ransomeverglades.org

***The door to the inner sanctum unlocked, Vladimir strides into the chamber to confront his long-time nemesis.***

***“Ernie!” Duke/Dr. Bananaman exclaims with an evil cackle, whirling from his death-ray control panel to face him. “It’s about time I crushed you in a match of wits. I call player one! Let’s DUEL!!”***

The Epic Polynomial Game

*Player one first thinks of an outrageously scary-looking polynomial with positive integer coefficients (i.e. x94 + 666x33 +3054608800x + 42).*

*Player two’s challenge is to correctly guess the polynomial.*

*Before guessing, however, player two is allowed to give player one up to 5 numbers to plug into the polynomial, and player one must in turn give him/her each of the results.*

*So, for example, if the polynomial player one picks is x2 + 2x + 1, and player two says, “0”, player one will then add up (0)2 + 2(0) + 1 and reply, “1”.*

*Player one wins if player two guesses the polynomial incorrectly, player two if he/she gets it right.*

*Can you come up with a strategy for Vladimir (Player 2) to win no matter what nefariously convoluted polynomial his rival can come up with?*

*And, for a real challenge, can you find a way to win every time**by only plugging in TWO numbers?*

Results (and, maybe, a 2-move winning strategy) will be posted on the Math Team board in Ludington and online at repow.wikispaces.com!